

INTERNATIONAL SEARCH REPORT

International Application No

PCT/DK 03/00771

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/11 C12N15/62 C07K14/00 C07K17/14 G01N33/68
C07K19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

CHEM ABS Data, WPI Data, EPO-Internal, BIOSIS, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	S BROWN: "Protein-mediated particle assembly" NANO LETTERS., vol. 1, no. 7, 2001, pages 391-394, XP002240662 ACS, WASHINGTON, DC., US ISSN: 1530-6984 the whole document	1-35
A	S BROWN ET AL.: "A genetic analysis of crystal growth" JOURNAL OF MOLECULAR BIOLOGY, vol. 299, 2000, pages 725-735, XP002240663 LONDON, GB ISSN: 0022-2836 cited in the application the whole document	1-35

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

8 March 2004

Date of mailing of the international search report

23/03/2004

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>S BROWN: "Metal-recognition by repeating polypeptides" NATURE BIOTECHNOLOGY., vol. 15, no. 3, 1997, pages 269-272, XP002240664 NATURE PUBLISHING., US ISSN: 1087-0156 cited in the application the whole document</p> <p>---</p>	1-35
A	<p>S BROWN: "Engineered iron oxide-adhesion mutants of the Escherichia coli phage lambda receptor" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA., vol. 89, September 1992 (1992-09), pages 8651-8655, XP002240665 NATIONAL ACADEMY OF SCIENCE. WASHINGTON., US ISSN: 0027-8424 cited in the application the whole document</p> <p>---</p>	1-35
A	<p>E LIE & G MOLIN: "hydrolysis and esterification with immobilized lipase on hydrophobic and hydrophilic zeolites" JOURNAL OF APPLIED CHEMISTRY AND BIOTECHNOLOGY., vol. 50, 1991, pages 549-553, XP002240666 BLACKWELL SCIENTIFIC PUBLICATIONS LTD. OXFORD., GB ISSN: 0268-2575 the whole document</p> <p>---</p>	1-35
A	<p>T A KELLER ET AL.: "Reversible oriented immobilization of histidine-tagged proteins on gold surface using a chelator thioalkane" SUPRAMOLECULAR SCIENCE, vol. 2, 1995, pages 155-160, XP002082734 OXFORD, GB ISSN: 0958-5677 the whole document</p> <p>---</p>	1-35
A	<p>WO 99 20649 A (MERCK PATENT GMBH) 29 April 1999 (1999-04-29) the whole document</p> <p>---</p>	1-35
A	<p>WO 98 58967 A (MASSACHUSETTS INSTITUTE OF TECHNOLOGY & HARVARD COLLEGE) 30 December 1998 (1998-12-30) the whole document</p> <p>---</p>	1-35

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>A CORMA ET AL.: "Delaminated zeolites; an efficient support for enzymes" ADVANCED MATERIALS., vol. 17, no. 1, 4 January 2002 (2002-01-04), pages 71-74, XP002272611 VCH VERLAGSGESELLSCHAFT, WEINHEIM, DE ISSN: 0935-9648 the whole document</p>	1-35
P,X	<p>S NYGAARD ET AL.: "Surface-specific zeolite-binding proteins" ADVANCED MATERIALS., vol. 14, no. 24, 17 December 2002 (2002-12-17), pages 1853-1856, XP001141114 VCH VERLAGSGESELLSCHAFT, WEINHEIM, DE ISSN: 0935-9648 the whole document</p>	1-35

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 21-24, 32
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 21-24, 32

Present claims 21-24 and 32 relate to a polypeptide tag and to a cell containing it, defined by reference to a desirable characteristic or property, namely its capability to control the orientation of proteins immobilized on a microporous material chosen among zeolites and similar solid surfaces.

The claims cover all products and cells having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products and pertinent cells. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the products and pertinent methods by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the products as far as limited by claims 25-26 (definite polypeptide tags and cells). 21-24, 32

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9920649	A	29-04-1999	WO 9920649 A1	29-04-1999
			EP 1025118 A1	09-08-2000
			JP 2001520236 T	30-10-2001
WO 9858967	A	30-12-1998	US 6368877 B1	09-04-2002
			US 2002072074 A1	13-06-2002
			WO 9858967 A1	30-12-1998
			US 2004023414 A1	05-02-2004